

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Bogdan Radu et al. Confirmation No.: 5462  
Serial No.: 10/711,463  
Filing Date: September 20, 2004  
Examiner: Jeremy Austin Luks  
Art Unit: 2837  
Title: DOOR TRIM SPEAKER GRILLE WITH ELECTROLUMINESCENT  
LAMP AND INJECTION MOLDING METHOD OF MAKING SAME  
Attorney Docket: MASL-59

Cincinnati, Ohio 45202

Date: January 16, 2006

**DECLARATION UNDER RULE 131**

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

We, Bogdan Radu, Alan G. Dry, and David Dooley (the inventors), being duly cautioned and sworn, submit this Declaration in response to the Office Action dated September 27, 2006, and state:

That we are the inventors of the invention entitled "DOOR TRIM SPEAKER GRILLE WITH ELECTROLUMINESCENT LAMP AND INJECTION MOLDING METHOD OF MAKING SAME" described and claimed in the application for Letters Patent of the United States, Serial No. 10/711,463, filed September 20, 2004 (the '463 application);

That this is a Declaration under the provisions of Rule 131 and the rules of practice for the United States Patent and Trademark Office in support of the '463 application;

That the invention described and claimed in the '463 application was conceived prior to April 9, 2004, the filing date of U.S. Publication No. 2005/0002199 to Stuffle, and prior to August 19, 2004, the publication date of German Publication No. 10316678 to Stuffle;

That, as evidence of the conception of the invention described and claimed in the '463 application, attached and incorporated into this Declaration as an Exhibit is a copy of a

written invention disclosure, which bears a date (now masked), created by one or all of the undersigned inventors in the United States before April 9, 2004 and bearing a date before April 9, 2004 (but with said date now masked);

That the attached Exhibit includes a detailed description of an automotive interior component, which clearly demonstrates that such automotive interior component embodies the elements claimed in at least pending independent claim 1 of the '463 application, and which was conceived before the April 9, 2004 filing date of U.S. Publication No. 2005/0002199 and the August 19, 2004 publication date of German Publication No. 10316678;

That the conception of the inventions claimed in at least pending independent claim 1 of the '463 application is fully supported by the attached Exhibit, and that all drawings and text included in the Exhibit having been created in the United States by one or all of the undersigned inventors before the April 9, 2004 filing date of U.S. Publication No. 2005/0002199 and the August 19, 2004 publication date of German Publication No. 10316678;

That the Exhibit demonstrates as follows:

That a method of fabricating an automotive interior component was conceived before April 9, 2004;

That the automotive interior component, which is for use with an audio speaker of a vehicle, comprised a door trim panel; a speaker grille mounted to said door trim panel, said speaker grille with a plurality of sound passages for transmitting sound emitted by the audio speaker; and an electroluminescent lamp positioned between the audio speaker and said speaker grille, said electroluminescent lamp oriented for emitting visible light, when powered, through said sound passages, as called for in pending independent claim 1 in the '463 application;

That the undersigned inventors were diligent from before April 9, 2004, which represents the filing date of U.S. Patent Application Publication No. 2005/0002199 and is therefore earlier than the August 19, 2004 publication date of German Publication No. 10316678, to September 20, 2004, which represents the filing date of the '463 application. Specifically, the undersigned inventors can account for the entire period during which reasonable diligence is required with affirmative acts within the United States and acceptable excuses. During this period, the attorneys acted within the United States with reasonable diligence on the application.

Specifically, in-house counsel for the Assignee was reasonably diligent in considering the attached Exhibit prepared by the inventors and subsequently forwarding the attached Exhibit to outside counsel for the Assignee on June 22, 2004 with instructions to prepare a patent application on the subject matter of the attached Exhibit. Subsequently, outside counsel for the Assignee was reasonably diligent in conducting phone conferences with one or more of the inventors on July 1, 2004 and July 22, 2004. Outside counsel for the Assignee prepared a working draft of a specification for the '463 application and forwarded the working draft of the specification to the inventors for their review on August 19, 2004. In particular, outside counsel for the Assignee had a reasonable backlog of unrelated cases taken up in chronological order and carried out expeditiously. The inventors were reasonably diligent in reviewing and approving the working draft of the specification between August 19, 2004 and September 9, 2004. Outside counsel for the Assignee was reasonably diligent in finalizing the specification of the '463 application, after receiving comments from the inventors' review. Outside counsel for the Assignee was reasonably diligent in forwarding the finalized specification, along with a Declaration/Power of Attorney to the cooperating inventors, on September 9, 2004. The cooperating inventors executed the Declaration/Power of Attorney on September 17, 2004. Outside counsel for the Assignee was reasonably diligent in filing the '463 application and the executed Declaration/Power of Attorney at the U.S. Patent and Trademark Office on September 20, 2004;

That the remaining inventor of the invention described and claimed in the '463 application, Bogdan Radu, was an uncooperative, non-signing inventor for which a petition under 37 C.F.R. 1.47(b) was granted;

That Mr. Daniel A. Ninivaggi was the 37 CFR 1.47 applicant;

That Mr. Radu failed to execute an assignment document to Lear Corporation when presented for execution by Outside Counsel for the Assignee;

That Daniel A. Ninivaggi, Executive Vice President, Secretary, and General Counsel, Lear Corporation, is an official of Lear Corporation (21557 Telegraph Road, Southfield, Michigan 48033) that is empowered to act on behalf of Lear Corporation;

Therefore, in summary, the Declaration and attached Exhibit constitute a showing of facts, in character and weight, that establish conception of the invention prior to the April 9, 2004 filing date of U.S. Publication No. 2005/0002199 and prior to the August 19, 2004 publication date of German Publication No. 10316678 for an automotive interior component that is the subject of and are claimed in Application Serial No. 10/798,908, all the acts of which occurred in the United States BEFORE April 9, 2004, and thus precede the filing date of U.S. Publication No. 2005/0002199 and the publication date of German Publication No. 10316678, and that the inventors and counsel for the inventors exhibited diligence from prior to the filing date of April 9, 2004 for U.S. Publication No. 2005/0002199 and from prior to the publication date of August 19, 2004 for German Publication No. 10316678 to the filing date of the '463 application;

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

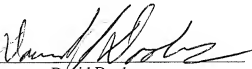
Further declarants sayeth naught.

By \_\_\_\_\_  
Earl J. LaFontaine (as 37 CFR 1.47  
applicant and empowered office for  
the Assignee on behalf of Bogdan Radu)

By   
Alan G. Dry

Date \_\_\_\_\_

Date 1/17/07

By   
David Dooley

Date 1/16/07

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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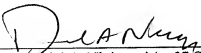
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We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Further declarants sayeth naught.

By   
Daniel A. Ninivaggi (as 37 CFR 1.47  
applicant and empowered office for  
the Assignee on behalf of Bogdan Radu)

By \_\_\_\_\_  
Alan G. Dry

Date 1/12/07

Date \_\_\_\_\_

By \_\_\_\_\_  
David Dooley

Date \_\_\_\_\_



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**Case Number:**

05017

**Title of Invention:**

Door Trim Speaker Grille with Electroluminescent (EL) light

**Customer Desire:**

1) The customer request for the some car lines to have a nice illuminating features when the inside car light is turned-on. This actual trim panel assembly light on some cars consists in a light installed on the trim below the bolster are.

**Brief description of invention:**

2) This new proposal consists in using the in-mold procedure of the Electroluminescent (EL) light in the speaker grille cover (in the same process operation) and/or on the surrounding bezel. The light pin connector will be located somewhere on the edge of the speaker grille cover bezel. Using EL light for the inside illumination is creating a uniform light with no flickering and with very rapid on/off response.

**The features of the invention you consider to be new:**

3) This new proposal consists in using the In-mold procedure of the Electroluminescent (EL) light in the speaker grille cover bezel tool (in the same process operation). The Electroluminescent (EL) light can have the basic electroluminescent colors (w

**How the invention improves over previously known products or processes, and identify the closest technology of which you are aware:**

4) Due to the fact that the Electroluminescent (EL) light life is much longer than the actual bulbs there is NO NEED for replacing the bulb during the life of the car (the lifetime for the EL light is up to 25,000 Hrs) Also using EL light type of illu

**Problem Solved:**

5) Due to the fact that this Electroluminescent (EL) light will be In-mold or Injected Molded in the same tool used for the speaker grille cover (using the same molding tool), will be eliminated any additional operation during the assembly process. In the same mold process we will be obtaining the complete one part number speaker grille or door trim assembly. The Electroluminescent (EL) light having the lifetime longer, the warranties issues will be totally eliminated (the replacing possibilities for a damaged bulb is not applicable). This patent claims: - Created an illuminated speaker grille cover and bezel area on the structure surface and/or on the surrounding bezel when use the night driving light. - Created a lighted grille sound sensitive (connected with car audio system) and can pulse with the music. - Created also a multiple pattern colors, which will change depending on music pulse. - Cutting the final product cost due to reduced number of components. - Reduced price for the final assembly. - Reducing the final price due to eliminating completely the assembly process (elimination of the multiple assembly stations) and due to a lower manufacture cost (in-mold or injection molded of the light). - Reducing the total cost due to eliminating the transport and storage of the additional components. - Assembly ready to be delivered, just after coming from the mold. - Creating a compact flip illuminated speaker grille assembly (the EL light is flat and thin and is incorporated in the same volume as for the grille or bezel) by eliminating the used volume of the previous light type assembly. - Manufacturing a flip pack switch assembly with light capability for night driving. - Reduced manufacturing and the maintenance price of the final assembly due eliminating of the LEDs, of the separate assembly housings and covers, of any type of mounting structure. - Creating an uniform light distribution of the light on a large surface. - Using the Electroluminescent (EL) light, which has a cooler operating temperature (no light heat), mean that housings will be able to use less expensive resins as well as less material. (the materials used for the surrounding components in the area must NO NEED for using heat resistant materials) - Creating a speaker grille with lighting capability (the EL light is flat and thin and is incorporated in the same volume as the speaker grille). - superior energy efficiency up to 90 percent less current consumption - high visibility in adverse condition - high quality light (no glare or flickering); the light being flat is illuminating the hole area more uniform than using the actual technology. - simplicity packaging that eliminates light bulb mounting structure. - lower cost due to a low cost tooling, the light is In-Mold or Injected Molded in the same tool used for flip pack housing and for the bolster. - reducing the power consumption as much as 90 percent for the same Lumens/Watt (LPW) - the EL light can be driven by an AC power source over a wide range of voltages and frequencies. - Assembly ready to be delivered, after coming from the mold. THIS NEW TYPE OF CONTRUCTION IS NOT USED IN ANY PRODUCTION PARTS AND BASED ON MY PATENT SEARCH WAS NOT PATENTED UP TO NOW

## Door Trim Speaker Grille with Electroluminescent (EL) light

Describe and quantify the extent of customer interest in this invention, including any associated cost savings: (MAX 255 Characters - If more needed attach a Word Document)

REQUIRED

1) The customer request for the some car lines to have a nice illuminating features when the inside car light is turned-on.

This actual trim panel assembly light on some cars consists in a light installed on the trim below the bolster are.

Please enter a brief description of your invention: (If you need more room you will be able to add a Word or other text document during Step 3 of this process)

REQUIRED

2) This new proposal consists in using the in-mold procedure of the Electroluminescent (EL) light in the speaker grille cover (in the same process operation) and/or on the surrounding bezel.

The light pin connector will be located somewhere on the edge of the speaker grille cover bezel.

Using EL light for the inside illumination is creating a uniform light with no flickering and with very rapid on/off response.

Please state the features of the invention you consider to be new:

REQUIRED

3) This new proposal consists in using the In-mold procedure of the Electroluminescent (EL) light in the speaker grille cover bezel tool (in the same process operation).

The Electroluminescent (EL) light can have the basic electroluminescent colors (white, green, red, blue, yellow and purple), or a different exterior color foil (interior referred to the car), same color like the interior trim panel.

Using EL light for the inside illumination is creating a uniform light on a larger area.

The speaker grille cover bezel area can be illuminated on the structure surface and/or on the surrounding bezel when use the night driving light.

The light can also be sound sensitive (connected with car audio system) and can pulse with the music. Can be created also a multiple pattern colors, which will change depending on music.

If the speaker grille is incorporated in the trim panel, can use this type of illumination on the standard basis or can be used only for the premium spcakers. If the speaker grille is designed to be independent attached, can be added later.

Please state how the invention improves over previously known products or processes, and identify the closest

REQUIRED

**technology of which you are aware:**

4) Due to the fact that the Electroluminescent (EL) light life is much longer than the actual bulbs there is NO NEED for replacing the bulb during the life of the car (the lifetime for the EL light is up to 25,000 Hrs)

Also using EL light type of illumination, is accomplish the following aspects:

- superior energy efficiency up to 90 percent less current consumption
- high visibility in adverse condition
- high quality light (no glare or flickering); the light being flat is illuminating the hole are more uniform than using the actual technology.
- simply packaging that eliminates light bulb structure
- no light heat (cold touch light), which makes comfortable any type of application
- lower cost due to a low cost tooling, the light is In-Mold or Injected Molded in the same tool used for the map pocket close-out.
- reducing the power consumption as much as 90 percent for the same Lumens/Watt (LPW)
- the EL light can be driven by an AC power source over a wide range of voltages and frequencies.
- no light heat (cold touch light), which makes comfortable any type of application (the materials used for the surrounding components in the area must NO NEED for using heat resistant materials)

Using the Foil Electroluminescent light and using the in-mold technology, will be eliminated a lot of components and part numbers. Also will minimize the packaging space for the light – will be incorporated in the cover material thickness (in-mold technology).

**Please explain the problem that was solved with this new invention and what were the problems with the existing technology:** REQUIRED

5) Due to the fact that this Electroluminescent (EL) light will be In-mold or Injected Molded in the same tool used for the speaker grille cover (using the same molding tool), will be eliminated any additional operation during the assembly process.

In the same mold process we will be obtaining the complete one part number speaker grille or door trim assembly.

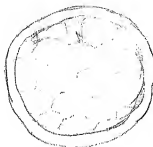
The Electroluminescent (EL) light having the lifetime longer, the warranties issues will be totally eliminated (the replacing possibilities for a damaged bulb is not applicable).

**This patent claims:**

- Created an illuminated speaker grille cover and bezel area on the structure surface and/or on the surrounding bezel when use the night driving light.
- Created a lighted grille sound sensitive (connected with car audio system) and can pulse with the music.
- Created also a multiple pattern colors, which will change depending on music pulse.
- Cutting the final product cost due to reduced number of components.

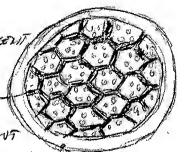
- Reduced price for the final assembly.
- Reducing the final price due to eliminating completely the assembly process (elimination of the multiple assembly stations) and due to a lower manufacture cost (in-mold or injection molded of the light).
- Reducing the total cost due to eliminating the transport and storage of the additional components.
- Assembly ready to be delivered, just after coming from the mold.
- Creating a compact flip illuminated speaker grille assembly (the EL light is flat and thin and is incorporated in the same volume as for the grille or bezel) by eliminating the used volume of the previous light type assembly.
- Manufacturing a flip pack switch assembly with light capability for night driving.
- Reduced manufacturing and the maintenance price of the final assembly due eliminating of the LEDs, of the separate assembly housings and covers, of any type of mounting structure.
- Creating an uniform light distribution of the light on a large surface.
- Using the Electroluminescent (EL) light, which has a cooler operating temperature (no light heat), mean that housings will be able to use less expensive resins as well as less material. (the materials used for the surrounding components in the area must NO NEED for using heat resistant materials)
- Creating a speaker grille with lighting capability (the EL light is flat and thin and is incorporated in the same volume as the speaker grille).
- superior energy efficiency up to 90 percent less current consumption
- high visibility in adverse condition
- high quality light (no glare or flickering); the light being flat is illuminating the hole area more uniform than using the actual technology.
- simplicity packaging that eliminates light bulb mounting structure.
- lower cost due to a low cost tooling, the light is In-Mold or Injected Molded in the same tool used for flip pack housing and for the bolster.
- reducing the power consumption as much as 90 percent for the same Lumens/Watt (LPW)
- the EL light can be driven by an AC power source over a wide range of voltages and frequencies.
- Assembly ready to be delivered, after coming from the mold.

SPEAKER  
GRILLE



ELECTROLUMINESCENT  
LIGHTING  
DESIGN

(WITH OR WITHOUT  
CIRCULAR BEZEL)



THE LIGHT WILL BE SOUND SENSITIVE.

